

REMARKS

Claims 1-35 are pending. Claim 15 is amended to recite that the second etching chemistry contains no fluorine. Support is found at specification page 8, fourth full paragraph. No new matter is believed to be added by entry of the amendment.

The anticipation rejection of Claims 1-3, 5-7, and 10-12 over U.S. 4,980,018 to Mu, et al. is kindly traversed. Mu, et al. does not anticipate this embodiment of the present invention. The anticipation rejection is unsustainable, and it should be withdrawn.

The embodiment set out in Claims 1-3, 5-7 and 10-12 requires *inter alia* etching a previously unetched semiconductor device with a first etchant chemistry. The first etchant chemistry requires a chlorine source and a fluorine source, but is free from BCl_3 . This is completely different from what Mu, et al. discloses. In contrast to the present invention, the first etchant of Mu, et al. ***contains substantially no Cl_2*** . See, e.g, Mu, et al. column 3, lines 41-43, column 6, lines 21-22, column 9, lines 8-10, column 10, lines 7-10 (Claim 1 therein), and column 11, lines 43-46. The Patent Office's position is that Mu, et al.'s second step should somehow be used as a first step. This is improper because it ignores express claim limitations and it is a piecemeal interpretation of the cited reference. It is well established that the Patent Office must consider all claim limitations, and the Office must consider a reference in its entirety. In short, the Office anticipation rejection fails because it relies on a disclosure that is not found in Mu, et al. and it misinterprets the claims. This embodiment of the invention clearly requires that an *unetched* semiconductor device undergo a *first etch*, which etchant chemistry *requires a chlorine source*. The present claims are not anticipated or made obvious by the teachings of Mu, et al. This rejection should be withdrawn as unsustainable.

The obviousness rejection of Claims 13-18, 20-21, 24, 25, and 29-35 over the combination of Mu, et al. and U.S. Patent No. 6,277,763 to Kugimiya, et al. is kindly traversed.

The Office relies upon Kugimiya, et al. for its teaching of a second power source to apply a bias power, but the Office's reliance is misplaced. Kugimiya, et al. teaches a process quite different from that of Mu, et al. and the Office improperly combines the teachings of these references without any motivation to do so and without any expectation of success in the combination. Where is the motivation to simply add a second power source to the process of Mu, et al. and what result would one expect from the addition.

Mu, et al.'s process is quite different Kugimiya, et al.'s process, and this is evidence against their combination. Mu, et al. appears to prohibit the use of chlorine in his first etching step, but Kugimiya et al. permits the use of chlorine in his first etching step. Conversely, Mu, et al. uses chlorine in his second step, but Kugimiya, et al. does not disclose the use of chlorine in his second step. Applicants kindly request the Office to explain the disparity in the teachings of Mu, et al. and Kugimiya, et al. or withdraw this rejection as unsustainable.

The obviousness rejection of dependent Claims 4, 8, 19 and 22 over Mu, et al. alone or in combination with Kugimiya, et al. is traversed. Neither Mu, et al. alone or combined with Kugiyima, et al. is sufficient to reject the broad claims. Accordingly, claims that depend from the broad claims are similarly patentable.

The obviousness rejection of Claims 9, 23 and 26-28 over the combination of Mu, et al., Kugimiya, et al. and U.S. Patent No. 5,626,775 to Roberts, et al. is kindly traversed. Roberts, et al. is apparently cited for its teaching of N₂ as a carrier gas, which is not taught in either Mu, et al. or Kugimiya, et al. The Office has not provided any explanation why Roberts, et al.'s teaching of particular carrier gases should be extended to the processes of either Mu, et al. or Kugimiya, et al. when Roberts, et al. uses completely different etchants than both Mu, et al. and Kugimiya, et al. Roberts, et al. uses, as etchants, trifluoroacetic acids, anhydrides, acid amides, and trifluormethyl esters thereof, and none of these etchants are taught as equivalent to the etchants used in Mu, et

al. or Kugimiya, et al. The Office appears to be in error when it asserts that it would be obvious to use the Roberts, et al. carrier gases in the Mu, et al. and/or Kugimiya, et al. processes. This rejection is similarly unsustainable, and its withdrawal is kindly requested.

For the reasons given above, the art rejections should be withdrawn as unsustainable.

The rejection for lack of written description of the term, "unetched" is kindly traversed. Applicants point out the example at page 11 of their application, wherein a newly-formed (and inherently unetched) refractory-metal-containing multi layer film is subjected to a first etching. This is believed to provide ample written description for the term in question. Applicants kindly point out that the fundamental factual inquiry in determining whether the application complies with the written description requirement is whether the specification conveys with reasonable clarity to those skilled in the art that as of the filing date sought, the Applicant was in possession of the invention as now claimed. MPEP § 2163 IB (May 2004 Edition). There is no question that the present claims were described in the application as originally filed. This rejection is unsustainable, and its withdrawal is kindly requested.

Applicants kindly submit that the present application is now in immediate condition for allowance, and the Examiner is kindly requested to pass this case to issue. Should the Examiner have any questions about this application or have any suggestions to place it into even better condition for allowance, the Examiner is kindly invited to contact Applicant's below-signed representative by telephone at the number below.

Respectfully submitted,

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